The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte ROBERT H. WOLLENBERG and THOMAS J. BALK

Appeal No. 2007-0511
Application No. 10/699,508[1]

Decided: 20 September 2007

Before FRED E. McKELVEY, *Senior Administrative Patent Judge*, and ADRIENE LEPIANE HANLON and MICHAEL P. TIERNEY, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-23. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants' invention is directed to a high throughput screening method and system for measuring the oxidation stability of lubricating oil

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[1] Application 10/699,508 was filed on October 31, 2003. The real party in interest is Chevron Oronite Company LLC.

compositions under program control. Claims 1 and 15 are the only independent claims on appeal. They read as follows:

> 1. A high throughput method for screening lubricating oil compositions, under program control, comprising:
>
> (a) providing a plurality of different lubricating oil composition samples comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive, each sample being in a respective one of a plurality of test receptacles;
>
> (b) measuring the oxidation stability of each sample to provide oxidation stability data for each sample; and,
>
> (c) outputting the results of step (b).
>
> 15. A system for screening lubricating oil composition samples, under program control, comprising:
>
> a) a plurality of test receptacles, each containing a different lubricating oil composition sample comprising (i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive;
>
> b) a computer controller for selecting individual samples for testing;
>
> c) receptacle moving means responsive to instructions from the computer controller for individually moving the selected samples to a testing station for measuring oxidation stability of the selected samples;
>
> d) means for measuring the oxidation stability of the selected samples to obtain oxidation stability data and for transferring the oxidation stability data to the computer controller.

The Examiner relies on the following evidence in rejecting the claims on appeal:

Kolosov et al. ("Kolosov")	2004/0123650 A1	Jul. 1, 2004
O'Rear	2003/0100453 A1	May 29, 2003
Gatto	2003/0171226 A1	Sept. 11, 2003
Perez et al. ("Perez")	US 5,236,610	Aug. 17, 1993
McFarland et al. ("McFarland")	US 6,541,271	Apr. 1, 2003
Smrcka et al. ("Smrcka")	EP 1,233,361 A1	Aug. 21, 2002
Garr et al. ("Garr")	US 5,993,662	Nov. 30, 1999

B. ISSUES

Have the Appellants sustained their burden of showing that the Examiner erred in rejecting claims 1-6, 10, and 15-19 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov and O'Rear or Gatto?

Have the Appellants sustained their burden of showing that the Examiner erred in rejecting claim 9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov and Perez?

Have the Appellants sustained their burden of showing that the Examiner erred in rejecting claims 7, 8, 20, and 21 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, McFarland, and O'Rear or Gatto?

Have the Appellants sustained their burden of showing that the Examiner erred in rejecting claims 11-14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Smrcka, and O'Rear or Gatto?

Have the Appellants sustained their burden of showing that the Examiner erred in rejecting claims 22 and 23 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Garr, and O'Rear or Gatto?

Have the Appellants sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1-3, 6, 11, 12, 15-18, and 21-23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 17, 18, and 24-30 of copending Application 10/779,422?

Have the Appellants sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1-3 and 10-14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 20, 22-24, and 26-30 of copending Application 10/699,529?

Have the Appellants sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1-3, 10-18, 22, and 23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44, and 45 of copending Application 10/699,507?

Have the Appellants sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1, 3, 15, 17, and 22 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 13, 19-22, and 33-35 of copending Application 10/699,509?

C. FINDINGS OF FACT

The following findings of fact are believed to be supported by a preponderance of the evidence. Additional findings of fact as necessary appear in the Analysis portion of the opinion.

1. Appellants' Specification

The Appellants' invention relates generally to methods for high throughput screening of lubricating oil compositions. Specification, p. 1, ll. 6-7.

The Appellants define "high throughput" as meaning that a relatively large number of different lubricating oil compositions are rapidly prepared and analyzed. Specification, p. 5, ll. 7-10.

The lubricating oil compositions for use in the high throughput screening method include a major amount of base oil of lubricating viscosity. Specification, p. 6, ll. 1-5.

The base oil may be any natural or synthetic lubricating base oil. Specification, p. 7, ll. 10-12.

The lubricating oil compositions also include at least one lubricating oil additive that can be any presently known or later-discovered additive used in formulating lubricating oil compositions. Specification, p. 11, ll. 17-19.

Samples of the lubricating oil compositions can be analyzed for oxidation stability measurements such as oxidation consumption data, deposit data, viscosity data, etc. Specification, p. 23, ll. 5-7.

The invention includes a testing station 220 which includes means for testing samples for oxidation stability, i.e., resistance to oxidation. Specification, p. 24, ll. 7-8.

According to the Appellants' Specification, various means for oxidation stability testing are known and generally include subjecting a sample to an oxygen environment and measuring the effect of oxidation on the sample over a predetermined period of time. Specification, p. 24, ll. 10-12.

The Appellants disclose several oxidation stability tests. Specification, p. 24, l. 13-p. 29, l. 8.

The Appellants define "program control" as meaning that the equipment used to provide the plurality of lubricating oil compositions is automated and controlled by a microprocessor or other computer control device. Specification, p. 5, ll. 19-21.

2. Kolosov

The invention disclosed in Kolosov relates to high throughput screens for evaluating the rheological properties of a material. Kolosov, para. [0002].

According to Kolosov, combinatorial chemistry refers generally to methods for synthesizing a collection of chemically diverse materials and to methods for rapidly testing or screening the collection of materials for desirable performance characteristics. Combinatorial chemistry approaches have greatly improved the efficiency of discovery of useful materials. Kolosov, para. [0004].

The disclosed invention may be used to screen or test flowable materials such as lubricants. Kolosov, para. [0042].

The invention is said to have particular utility in connection with screening a number of different material forms including oils. Kolosov, para. [0043].

The Kolosov invention can be used to analyze the resulting properties of a particular flowable sample material or the relative or comparative effects that an additive has upon a particular flowable sample material, e.g., the effect of a detergent, a flow modifier, or the like. Kolosov, para. [0043].

Properties that may be measured include viscosity, density, thermal degradation, aging characteristics, relative or absolute component concentration, chemical composition, presence and amounts of other low-molecular weight impurities in samples, and agglomeration or assemblage of molecules. Kolosov, para. [0065].

A plurality of samples may be employed in the disclosed method. Kolosov, para. [0056].

The plurality of samples can be a library of samples. Kolosov, para. [0057].

The library of samples can comprise product mixtures that are varied with respect to additives. Kolosov, para. [0061].

In one embodiment of the invention, an array of materials is screened for viscosity. Kolosov, para. [0029].

It is contemplated that a parameter, e.g., a parameter that relates to a rheological property, of a sample is measured at a first time followed by measuring the parameter at a second time and so on during a predetermined period of time. Kolosov, para. [0096].

Figure 1 illustrates a system 10 for measuring or determining material properties such as viscosity of a combinatorial library of material samples. Kolosov, para. [0067].

The system 10 includes a stimulus generator 12 that applies power to a probe 14 for applying a stimulus to one or more samples in an array or library of samples. Kolosov, para. [0067].

The system 10 also includes a sensor or transducer 20 for monitoring a response of the one or more samples to the stimulus. Kolosov, para. [0067].

Typically, the transducer 20, the stimulus generator 12 or both are in communication with a computer sub-system 23 such as a microprocessor or other like computer for manipulating data. For example, the computer sub-system 23 may be employed to receive and store data such as responses of samples, material properties of samples, or the like. Kolosov, para. [0068].

The samples may be physically separated from each other, such as in different regions of a substrate or in different sample containers. Kolosov, para. [0056].

Kolosov contemplates that the substrate and sample containers can be used with automated sampling and automated substrate-handling devices. Kolosov, para. [0059].

In one embodiment, the samples may be moved relative to the probe 14. Kolosov, para. [0073].

The samples may be moved by an automated system, e.g., a robot arm. Kolosov, para. [0073].

A suitable automated system may be a robotic system that has multiple axis range of motion in the orthogonal x, y, z coordinate axes system. Typically, such an automated system would be part of or in communication with the computer sub-system 23. Kolosov, para. [0074].

3. O'Rear

O'Rear discloses a blend of lube base oils which provide improved oxidation stability, both with and without additives. O'Rear, para. [0001].

According to O'Rear, para. [0002]:

> Finished lubricants used for automobiles, diesel engines, and industrial applications consist of two general components: a lube base oil and additives. In general, a few lube base oils are used to generate a wide variety of finished lubricants by varying the mixtures of individual lube base oils and individual additives. This requires that lube base oils be stored without additives prior to use. Also, lube base oils are an item of commerce and are bought, sold and exchanged. Since the receiver of the lube base oil wants to formulate specific finished lubes, they do not want to receive lube base oils that already contain additives. Thus, lube base oils in almost all circumstances do not contain additives, and are simply hydrocarbons prepared from petroleum or other sources. Thus one general requirement for a lube base oil is that it have good stability during shipment and storage in the absence of additives. In addition, it is desirable that the finished lubricant have as good a stability as possible. In this case, the stability is the resistance to oxidation and formation of deposits during shipment and storage in the presence of additives and other compounds that simulate use in commercial equipment. The preferred lube base oil is one that has a combination of good stability without additives and with additives.

The lube base oil disclosed in O'Rear may be used in a finished lubricant composition and, thus, may contain one or more additives, depending on the particular use of the oil. O'Rear, para. [0046].

O'Rear discloses that the additives are used in amounts which are known to those of skill in the art, preferably about 0.1 to about 40 weight percent of the final lube oil product. O'Rear, para. [0046].

O'Rear also discloses that a convenient way to measure the stability of lube base oils is using the Oxidator Test. There are two forms of the test: Oxidator BN and Oxidator A. O'Rear, para. [0031].

The Oxidator A test is a measure of oxidation stability during shipping and storage. O'Rear, para. [0031].

Another method for studying the stability of lube base oils during storage is to monitor floc and sediment formation when stored in an oven while exposed to air. O'Rear, para. [0034].

According to the method disclosed in O'Rear, 50 grams of lube base oil is placed in a loosely capped 7 ounce bottle and placed in an oven at 150°F. The sample is inspected periodically for an increase in color or formation of floc or sediments. The test is run for 90 days. O'Rear, para. [0034].

4. Gatto

According to Gatto, para. [0002]:

> Lubricating oils used in the internal combustion engines of automobiles or trucks are subjected to a demanding environment during use. Among other adverse effects, this environment can lead to oxidative degradation of the oil. This oxidation of the oil is catalyzed by the presence of certain impurities in the oil, such as iron compounds. This oxidation also is promoted by the elevated temperatures to which the oil is subjected during use. The oxidation of lubrication oils during use is usually controlled in part by the use of antioxidant additives, which may extend the useful life of the oil, particularly by reducing or inhibiting unacceptable increases in the viscosity of the oil.

Gatto discloses organomolybdenum compositions having high molybdenum content which are useful as lubricant additives. Gatto, para. [0001].

The disclosed organomolybdenum compositions are said to improve deposit control, antioxidant, antiwear, and/or friction modifying properties of lubricant oils. Gatto, para. [0043].

The disclosed organomolybdenum additive can be employed in a variety of lubricating oil base stocks, such as derived from natural lubricating oils, synthetic lubricating oils, or mixtures thereof. Gatto, para. [0049].

In one embodiment, a lubricant oil can be a formulated oil comprising between about 75 to about 95 weight percent of a base oil of lubricating viscosity, between 0 and 30 weight percent of a polymeric viscosity index improver, between about 5 and 15 weight percent of an additional additive package, and typically a sufficient amount of molybdenum complex to provide at least about 50 ppm of molybdenum to the finished lubricant. Gatto, para. [0051].

In Example 2, organomolybdenum complexed product samples 1-9 were evaluated as additives in a modified version of the Caterpillar Micro-Oxidation Test. Each additive was added to a separate amount of SAE grade 15W-40 fully formulated crankcase oil. Gatto, para. [0064].

According to Gatto, the Micro-Oxidation Test is a commonly used technique for evaluating the deposit forming tendencies of a wide variety of passenger car and diesel lubricants as well as mineral and synthetic basestocks. The test measures the oxidative stability and deposit forming tendencies of lubricants under high temperature thin-film oxidation

conditions. The ability to easily vary test conditions and the flexibility of presenting test results makes it a valuable research tool for screening a wide variety of lubricant products. Gatto, para. [0065].

5. Perez

According to Perez, known lubricants subjected to a high temperature environment suffer from severe and rapid thermal and oxidative deterioration. Oxidation of a lubricant produces reaction products which eventually form deposits that are detrimental to oil consumption and engine emissions. Perez, col. 1, ll. 30-35.

Antioxidants typically are added to lubricants to combat oxidation. Perez, col. 1, ll. 36-37.

The invention disclosed in Perez relates to a liquid composition which can be utilized as a base stock blend for high temperature lubricants and a solid antioxidant additive solubilized for high temperature lubricants. Perez, col. 1, ll. 8-11.

Two differential scanning calorimetry methods were used to study oxidation stability. The first was an isothermal method. The second was a programmed temperature method. Perez, col. 9, ll. 1-12.

6. McFarland

The invention disclosed in McFarland generally relates to methods and apparatus for rapidly screening an array of diverse materials, and in particular, to the combinatorial synthesis and characterization of libraries of diverse materials using IR imaging and spectroscopy techniques. McFarland, col. 1, ll. 28-33.

In one embodiment of the invention, the system generally includes a Fourier transform infrared spectrometer. McFarland, col. 15, ll. 65-66.

7. Smrcka

Smrcka discloses a system and method for new product development, especially for new or customized chemical products. Smrcka, para. [0004].

The method includes testing the product and storing details and results of the testing in a computer readable database. Smrcka, para. [0011].

The database is available globally from any personal computer having suitable client software installed and suitable network connectivity. Smrcka, para. [0038].

8. Garr

Garr discloses a method for producing a large chemical library of purified products from a chemical library of raw reaction products. Garr, col. 1, ll. 7-15.

In accordance with the invention, reaction tubes, each containing a reaction product, are arranged in an array. Each reaction tube and product is identified by a unique code, such as a bar code, which is optically readable. Garr, col. 4, ll. 3-9.

The code is stored in the memory of a digital signal processor on a database. Garr, col. 4, ll. 9-10.

The code is used to relate each pure chemical compound to the original reaction product from which it is derived. Garr, col. 3, ll. 26-32.

D. PRINCIPLES OF LAW

A claimed invention is not patentable if the subject matter of the claimed invention would have been obvious to a person having ordinary skill in the art. 35 U.S.C. § 103(a); *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007); *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

Facts relevant to a determination of obviousness include (1) the scope and content of the prior art, (2) any differences between the claimed invention and the prior art, (3) the level of skill in the art, and (4) any relevant objective evidence of obviousness or non-obviousness. *KSR*, 127 S. Ct. at 1734, 82 USPQ2d at 1389, *Graham*, 383 U.S. at 17-18.

The question under 35 U.S.C. § 103 is not merely what the references teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made. All disclosures of the prior art, including unpreferred embodiments, must be considered. *In re Lamberti*, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976).

One of ordinary skill in the art is presumed to have skills apart from what the prior art references expressly disclose. *See In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). A person of ordinary skill is also a person of ordinary creativity, not an automaton. *KSR*, 127 S. Ct. at 1742, 82 USPQ2d at 1397.

All that is required for obviousness under 35 U.S.C. § 103 is a reasonable expectation of success. *O'Farrell*, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

A rejection premised upon a proper combination of references cannot be overcome by attacking the references individually. *In re Keller*, 642 F.2d 413, 426, 208 USPQ 871, 882 (CCPA 1981).

If the word "means" appears in a claim element in combination with a function, it is presumed to be a means-plus-function element to which 35 U.S.C. § 112, sixth paragraph, applies. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1318, 50 USPQ2d 1161, 1166 (Fed. Cir. 1999).

The first step in construing a "means-plus-function" limitation is to determine the function of the limitation. The second step is to determine the corresponding structure described in the specification and equivalents thereof. Structure is "corresponding structure" only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim. *Medtronic Inc. v. Advanced Cardiovascular Sys. Inc.*, 248 F.3d 1303, 1311, 58 USPQ2d 1607, 1614 (Fed. Cir. 2001).

Claims are not read in a vacuum but rather must be read in the light of the specification. *In re Prater*, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969).

Nothing in the rules or in jurisprudence requires the fact finder to credit unsupported or conclusory assertions. *Rohm and Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092, 44 USPQ2d 1459, 1462 (Fed. Cir. 1997).

E. ANALYSIS

1. Claims 1-6, 10, and 15-19

The Examiner finds that Kolosov does not teach that the disclosed high throughput method screens lubricants for oxidation stability by either determining the time required for a lubricant sample to consume a predetermined amount of oxygen or measuring the amount of deposits formed by a lubricant sample exposed to oxidation reaction conditions. Final Office Action mailed November 4, 2005 at 8; Answer at 7.

The Examiner finds that O'Rear teaches that the oxidation stability of a lubricant oil sample can be determined by exposing the sample to an oxidative atmosphere and determining the time required for the sample to absorb one liter of oxygen. The Examiner finds that Gatto teaches a method for determining the oxidation stability of a lubricant oil composition by

measuring the deposits formed by the sample under high-temperature thin-film oxidation conditions. Final Office Action mailed November 4, 2005 at 8-9; Answer at 7.

The Examiner concludes (Final Office Action mailed November 4, 2005 at 9; Answer at 7):

> Based upon the combination of Kolosov et al and either O'Rear or Gatto, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al for oxidation stability since Kolosov et al teach that the plurality of samples in the array are screened for various material characteristics, and both O'Rear and Gatto teach that it is common to screen lubricating oil compositions for their oxidation stability by either determining the time required for a lubricant sample to consume a predetermined amount of oxygen or by measuring the amount of deposits formed by a lubricant sample exposed to oxidation reaction conditions.

a. Step of measuring oxidation stability

Claim 1 recites a high throughput method for screening lubricating oil compositions, **under program control**, comprising the step of "measuring the oxidation stability of each sample to provide oxidation stability data for each sample."

The Appellants argue that O'Rear and Gatto do not disclose or suggest the invention of claim 1. Appeal Brief at 10-11, 12. Specifically, the Appellants argue that neither O'Rear nor Gatto discloses, motivates, or suggests an automatic high throughput method operated under program control, i.e., one that automatically screens lubricating oil compositions for oxidation stability. Appeal Brief at 14.

The Appellants appear to be arguing that the phrase "under program control" in claim 1 requires an automated step of measuring oxidation stability. However, according to the Appellants' Specification, "program control" is defined as meaning that the equipment used to provide the plurality of lubricating oil compositions is automated, **NOT** that the step of measuring oxidation stability is automated. Specification, p. 5, ll. 19-21. For this reason, the Appellants' argument is not persuasive.

b. Means for measuring oxidation stability

Claim 15 recites a system for screening lubricating oil composition samples, under program control, comprising "d) means for measuring the oxidation stability of the selected samples to obtain oxidation stability data and for transferring the oxidation stability data to the computer controller."

The Examiner concludes that the means recited in part d) invokes 35 U.S.C. § 112, sixth paragraph. Answer at 11. The Appellants do not challenge this conclusion in the Reply Brief.

According to the Appellants' Specification, the "means for measuring the oxidation stability of the selected samples to obtain oxidation stability data" include "subjecting the sample to an oxygen environment and measuring the effect of oxidation upon the sample over a predetermined period of time." Specification, p. 24, ll. 10-12.

The Appellants disclose several oxidation stability tests, including the Lube Oil Oxidator test method (Specification, p. 24, l. 13-p. 25, l. 16) and the thin film oxygen uptake test method (Specification, p. 28, l. 19-p. 29, l. 8).

According to the Appellants' Specification the means "for transferring the oxidation stability data to the computer controller" are electrical or

optical signals transmitted via signal transmission line 223 to computer controller 230. Specification, p. 24, ll. 8-10.

The Appellants argue that O'Rear and Gatto do not disclose the invention of claim 15. Appeal Brief at 11, 12. Specifically, the Appellants argue that neither O'Rear nor Gatto discloses, motivates, or suggests an automatic high throughput system operated under program control, i.e., one that automatically screens lubricating oil compositions for oxidation stability. Appeal Brief at 14.

We find that two aspects of the appellants' invention as recited in claim 15 are automated. First, the equipment used to provide the plurality of lubricating oil compositions is automated. Specification, p. 5, ll. 19-21 (defining "program control"). Second, the means for transferring the oxidation stability data to the computer controller is automated. Specification, p. 24, ll. 8-10.

It is of no moment that Gatto and O'Rear do not disclose an automated system within the scope of claim 15. The Examiner merely relies on Gatto and O'Rear to establish that the oxidation stability tests disclosed therein were known to be useful for testing the oxidation stability of lubricating oil compositions. Answer at 14, 15. Gatto and O'Rear also establish that one of ordinary skill in the art would have recognized the importance of testing lubricating oil compositions for oxidation stability.

The Examiner relies on Kolosov as teaching a high-throughput, automatic apparatus for screening lubricating oil compositions. See Kolosov, para. [0059] (contemplating an automated sampling device); Kolosov, para. [0068] (disclosing an automated means for transferring data

to a computer). Significantly, the Appellants have not challenged this finding in the Appeal Brief.

c. Claimed lubricant compositions

Claim 1 is directed to a high throughput method for screening lubricating oil compositions comprising "(i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive." Similarly, claim 15 is directed to a system for screening lubricating oil composition samples comprising "(i) a major amount of at least one base oil of lubricating viscosity and (ii) a minor amount of at least one lubricating oil additive."

The Examiner found that compounds analyzed by the method and system disclosed in Kolosov can be lubricants having an additive therein. The Examiner found that "[i]t is inherent that in a lubricant composition having an additive therein that the base lubricant oil is present in a major amount while the additive is present in a lesser amount." Final Office Action mailed November 4, 2005 at 13.

The Appellants argue that lubricating oil compositions do not have to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. The Appellants argue that a lubricating oil composition can be a concentrate that contains a major amount of a lubricating oil composition and a minor amount of base oil of lubricating viscosity as a diluent for the concentrate. Appeal Brief at 10.

In response, the Examiner finds that an additive, by definition, means any substance incorporated into a base material, usually in a low concentration, to perform a specific function, i.e., a stabilizer, preservative, dispersing agent, antioxidant, etc. For support, the Examiner points to a

definition of "additive" in *The Condensed Chemical Dictionary* 20 (10th ed. 1981). Answer at 11. The Appellants do not challenge this finding in the Reply Brief.

Kolosov discloses a high throughput method for screening many flowable materials such as lubricants. Kolosov, para. [0042]. Kolosov discloses that the high throughput method can be used to analyze the resulting properties of a particular flowable material or the relative or comparative effects that an additive has upon a particular flowable material, e.g., the effect of a detergent, a flow modifier, or the like. Kolosov, para. [0043]. Based on these teachings we find that Kolosov would have reasonably suggested a high throughput method for testing lubricants containing an additive.

Kolosov does not expressly disclose that the lubricants comprise a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. However, the record before us establishes that one of ordinary skill in the art would have understood "additive" to mean any substance incorporated into a base material, usually in a low concentration. See *The Condensed Chemical Dictionary* at 20; see also O'Rear, paras. [0002] and [0046]; Gatto, para. [0051]. We find that one of ordinary skill in the art would have reasonably expected the lubricant compositions in Kolosov, comprising a lubricant and an additive, to have a major amount of a base oil and a minor amount of an additive.

d. <u>Conclusion</u>

For the reasons set forth above, it is reasonable to conclude that the method of claim 1 and the system of claim 15 would have been obvious to

one of ordinary skill in the art in view of the combined teachings of Kolosov and O'Rear or Gatto.

2. Claim 9

Claim 9 depends from claim 1 and recites that the step of measuring the oxidation stability of each sample is determined by differential scanning calorimetry.

The Examiner finds that Kolosov does not teach that the disclosed lubricants can be screened for oxidation stability using differential scanning calorimetry. The Examiner finds that Perez teaches that differential scanning calorimetry can be used to determine the oxidation stability of liquid lubricant compositions containing antioxidant additives. The Examiner concludes that the invention of claim 9 would have been obvious to one of ordinary skill in the art in view of the combined teachings of Kolosov and Perez. Final Office Action mailed November 4, 2005 at 9-10; Answer at 7-8.

The Appellants do not challenge the Examiner's findings or conclusion of obviousness as to claim 9 in the Appeal Brief. Rather, the Appellants argue that Perez does not cure the deficiencies of Kolosov as to claim 1. Appeal Brief at 15-16.

For the reasons set forth above, the teachings of Kolosov and O'Rear or Gatto render obvious the subject matter of claim 1.[2] Therefore, there are no deficiencies that Perez must cure.

3. Claims 7, 8, 20, and 21

[2] Since claim 9 depends from claim 1, it is readily apparent that claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Perez, and O'Rear or Gatto.

Claim 7 depends from claim 1 and recites that the step of measuring the oxidation stability of each sample comprises using infrared spectroscopy.

The Examiner finds that Kolosov fails to teach that the disclosed lubricants can be screened for oxidation stability using infrared spectroscopy. The Examiner finds that McFarland discloses that infrared spectroscopy may be used to quantify the stability of materials in a combinatorial array and characterize chemical reactions. The Examiner concludes that the invention of claim 7 would have been obvious to one of ordinary skill in the art in view of the combined teachings of Kolosov, McFarland, and O'Rear or Gatto. Final Office Action mailed November 4, 2005 at 10-11; Answer at 8-9.

The Appellants do not challenge the Examiner's findings or conclusion of obviousness as to claim 7 in the Appeal Brief. Rather, the Appellants argue that McFarland does not cure the deficiencies of Kolosov, O'Rear, and Gatto as to claim 1. Appeal Brief at 16-18.

For the reasons set forth above, the teachings of Kolosov and O'Rear or Gatto render obvious the subject matter of claim 1. Therefore, there are no deficiencies that McFarland must cure.

4. <u>Claims 11-14</u>

Claim 11 depends from claim 1 and recites that the step of outputting comprises storing the results of step (b) on a data carrier.

The Examiner finds that Smrcka teaches a method of testing a new chemical product and storing the results in a data carrier such as a computer readable medium. Final Office Action mailed November 4, 2005 at 11; Answer at 9. We also find that Kolosov stores data such as responses of

samples, material properties of samples, or the like on a computer sub-system 23. Kolosov, para. [0068].

The Examiner concludes that the invention of claim 11 would have been obvious to one of ordinary skill in the art in view of the combined teachings of Kolosov, Smrcka, and O'Rear or Gatto. Final Office Action mailed November 4, 2005 at 11; Answer at 9-10.

The Appellants do not challenge the Examiner's findings or the Examiner's conclusion of obviousness as to claim 11 in the Appeal Brief. Rather, the Appellants argue that Smrcka does not cure the deficiencies of Kolosov, O'Rear, and Gatto as to claim 1. Appeal Brief at 18-19.

For the reasons set forth above, the teachings of Kolosov and O'Rear or Gatto render obvious the subject matter of claim 1. Therefore, there are no deficiencies that Smrcka must cure.

5. Claims 22 and 23

Claim 22 depends from claim 15 and recites that each test receptacle has a bar code affixed to an outer surface thereof.

The Examiner finds that the containers holding lubricant samples in Kolosov do not have a bar code attached thereto. The Examiner finds that Garr teaches that it is common in a combinatorial library to identify individual containers by a unique code, such as a bar code, which is optically readable. The Examiner finds that the code can be stored in the memory of a digital signal processor on a database. Final Office Action mailed November 4, 2005 at 12; Answer at 10.

The Examiner concludes that the invention of claim 22 would have been obvious to one of ordinary skill in the art in view of the combined

teachings of Kolosov, Garr, and O'Rear or Gatto. Final Office Action mailed November 4, 2005 at 12; Answer at 10.

The Appellants do not challenge the Examiner's findings or the Examiner's conclusion of obviousness as to claim 22 in the Appeal Brief. Rather, the Appellants argue that Garr does not cure the deficiencies of Kolosov, O'Rear, and Gatto as to claim 15. Appeal Brief at 19-20.

For the reasons set forth above, the teachings of Kolosov and O'Rear or Gatto render obvious the subject matter of claim 15. Therefore, there are no deficiencies that Garr must cure.

6. Double patenting rejections

The Appellants do not challenge the double patenting rejections on appeal. Rather, the Appellants state, "Upon resolution of all outstanding issues remaining in this application, Appellants will submit a Terminal Disclaimer to obviate the provisional rejections." Appeal Brief at 21.

F. CONCLUSIONS OF LAW

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 1-6, 10, and 15-19 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov and O'Rear or Gatto.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claim 9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov and Perez.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 7, 8, 20, and 21 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, McFarland, and O'Rear or Gatto.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 11-14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Smrcka, and O'Rear or Gatto.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 22 and 23 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Garr, and O'Rear or Gatto.

The Appellants have not sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1-3, 6, 11, 12, 15-18, and 21-23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 17, 18, and 24-30 of copending Application 10/779,422.

The Appellants have not sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1-3 and 10-14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 20, 22-24, and 26-30 of copending Application 10/699,529.

The Appellants have not sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1-3, 10-18, 22, and 23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44, and 45 of copending Application 10/699,507.

The Appellants have not sustained their burden of showing that the Examiner erred in provisionally rejecting claims 1, 3, 15, 17, and 22 under the judicially created doctrine of obviousness-type double patenting as being

unpatentable over claims 1, 13, 19-22, and 33-35 of copending Application 10/699,509.

G. DECISION

The rejection of claims 1-6, 10, and 15-19 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov and O'Rear or Gatto is affirmed.

The rejection of claim 9 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov and Perez is affirmed.

The rejection of claims 7, 8, 20, and 21 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, McFarland, and O'Rear or Gatto is affirmed.

The rejection of claims 11-14 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Smrcka, and O'Rear or Gatto is affirmed.

The rejection of claims 22 and 23 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Kolosov, Garr, and O'Rear or Gatto is affirmed.

The provisional rejection of claims 1-3, 6, 11, 12, 15-18, and 21-23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 17, 18, and 24-30 of copending Application 10/779,422 is affirmed.

The provisional rejection of claims 1-3 and 10-14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 20, 22-24, and 26-30 of copending Application 10/699,529 is affirmed.

The provisional rejection of claims 1-3, 10-18, 22, and 23 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 13-17, 20, 22, 34-37, 39-42, 44, and 45 of copending Application 10/699,507 is affirmed.

The provisional rejection of claims 1, 3, 15, 17, and 22 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 13, 19-22, and 33-35 of copending Application 10/699,509 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cc (via U.S. Mail):

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